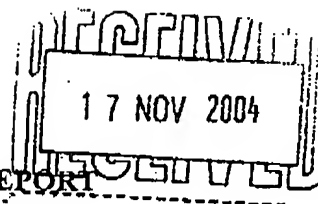


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



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|--|--|--|
| Applicant's or agent's file reference 03P079:TJD:RC:SLD | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416). | |
| International Application No. PCT/AU2003/001143 | International Filing Date (day/month/year) 4 September 2003 | Priority Date (day/month/year) 4 September 2002 |
| International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ G01M 3/28, F16L 55/134, 55/163, G01N 21/88 | | |
| Applicant GILLAM, Terence Dominic | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheet(s).

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

| | |
|---|--|
| Date of submission of the demand 1 April 2004 | Date of completion of the report 5 November 2004 |
| Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929 | Authorized Officer JULIA HU Telephone No. (02) 6283 2754 |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/001143

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/001143

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of Box IV

The International Preliminary Examination Report has been drawn up in respect of the entire international application but the International Preliminary Examining Authority is of the opinion that the application does not appear to comply with the requirements of unity of invention as set forth in the PCT regulations (Article 34(3), Rule 68(1) PCT).

The separate groups of invention are:

1. Claims 1-21 directed to a flexible probe for sealing/testing or patching a pipe, comprising an inflatable bladder and camera assembled in series at a distal end of a cable, wherein the inflatable bladder comprises an elongate annular bladder surrounding the cable with the camera at the head providing an advance view in the feed direction, and the probe has a elongate flexible body to pass down a pipe and deform to pass around corners in the pipe and be inflated to seal or apply patches.
2. Claims 22-28 directed to a system for in situ remote patching of pipes comprising a flexible inflatable patch applicator probe having a inflatable bladder and camera located at the distal end of a feed cable, and an adhesive applicator jig, wherein the jig comprises a hollow former sandwiched between the probe and patch to stabilise same while the adhesive is being applied and then being slidably removable before the patch and probe are fed into a pipe.

The feature common to all of the claims is an inflatable bladder and camera located at a distal end of a feed cable. However this common feature is known in the art. See for example, US 4995761 (Fig. 2A) or US 4691728 (Fig. 2). Consequently the common feature does not constitute "a special technical feature" within the meaning of PCT Rule 13.2, second sentence, since it makes no contribution over the prior art. Since there exists no other common feature which can be considered as a special technical feature within the meaning of PCT Rule 13.2, second sentence, no technical relationship within the meaning of PCT Rule 13 between the different inventions can be seen. Consequently the claims do not satisfy the requirement of unity of invention *a posteriori*.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/001143

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

See separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/AU2003/001143

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|-----|
| Novelty (N) | Claims 1-28 | YES |
| | Claims | NO |
| Inventive step (IS) | Claims 1-28 | YES |
| | Claims | NO |
| Industrial applicability (IA) | Claims 1-28 | YES |
| | Claims | NO |

2. Citations and explanations (Rule 70.7)

NOVELTY (N) AND INVENTIVE STEP (IS) claims 1-28

The invention of the claims 1-21 is a flexible probe for sealing/testing or patching a pipe, comprising an inflatable bladder and camera assembled in series at a distal end of a cable; the inflatable bladder comprises an elongate annular bladder surrounding the cable with the camera at the head providing an advance view in the feed direction, and the probe has a elongate flexible body so that it may pass down a pipe and deform to pass around corners in the pipe and be inflated to seal or apply patches.

Claims 22-28 further define a system for in situ remote patching of pipes comprising a flexible inflatable patch applicator probe and an adhesive applicator jig, wherein the jig comprises a hollow former sandwiched between the probe and patch to stabilise same while the adhesive is being applied and then being slidably removable before the patch and probe are fed into a pipe.

No individual document or obvious combination of documents disclose or fairly suggest all of the features of such a probe and/or applicator jig. The closest art of US 4995761 discloses a probe with an inflatable bladder and camera. However, the camera is carried separately on a sled, and is used to initially examine the interior of a pipe and then to view the site as the patch is being applied, that is, the camera provides a view in the opposite direction to a feed direction. Also, this document does not teach or suggest that a cylindrical former is used in the process of applying adhesive resin to the flexible sleeve.

Therefore, the inventions as defined in the present claims are considered to be novel and inventive in view of the prior art.